

SEREBRYAKOV, V.M., inzh.

Illumination of construction jobs. Svetotekhnika 5 no.10:8-14
0 '59. (MIRA 13:2)

1.Trest "Moselektromontazh - 1."
(Electric lighting)

VARTANOV, G.L., inzh.; SEREBRYAKOV, V.M., inzh.; VOLFYAN, G.A.,
nauchnyy red.; ZVORYKINA, L.N., red. izd-va; MIKHEYEVA, A.A.,
tekhn. red.

[Indoor electrical wiring operations] Vnutrennie elektromontazh-
nye raboty. 1zd.2., perer. Moskva, Gosstroizdat, 1962. 211 p.
(MIRA 15:6)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organi-
zatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu.
(Electric wiring, Interior—Handbooks, manuals, etc.)

SEREBRYAKOV, Viktor Mikhaylovich; YARTSEV, N., red.; SHLYK, M.,
tekhn. red.

[The groups of initiators act] Initsiativnye gruppy deistvuiut.
Moskva, Mosk. rabochii, 1962. 38 p. (MIRA 15:11)
(Building--Technological innovations)

VARTANOV, Grayr Leonovich; VERNER, Vadim Vladimirovich; ~~SEREBRYAKOV,~~
~~Viktor Mikhaylovich;~~ GUREVICH, B.M., nauchnyy red.; CHISLOV,
M.M., red.; SKITEVA, R.A., red.; NESMYSLOVA, L.M., tekhn. red.

[A manual for electricians and repairmen]Elektromonter-remontnik.
Moskva, Proftekhizdat, 1962. 222 p. (MIRA 16:1)
(Electric motors--Maintenance and repair)
(Electric transformers--Maintenance and repair)
(Electric machinery--Maintenance and repair)

VARTANOV, Grayr Leonovich; SEREBRYAKOV, Viktor Mikhaylovich;
MAMIKONOV, Yu.G., nauchn. red.; ZVORYKINA, L.N., red.

[Outdoor wiring and equipment installation operations]
Naruzhnye elektromontazhnye raboty. Moskva, Stroiizdat,
1964. 209 p. (MIRA 17:5)

VARTANOV, Grayr Leonovich; VERNER, Vadim Vladimirovich; SEEBRYAKOV,
Viktor Mikhaylovich; SOROKINA, M.I., red.

[Electromechanical technician and repairman] Elektromonter-
remontnik. Moskva, Vysshaya shkola, 1965. 206 p.
(MIRA 18:8)

SHAPIRO, I.I.; MIKHAYLOV, D.V.; MOSINA, T.S., inzh.; YEVLAMPIYEVA, V.M., inzh.; KASHINTSEVA, L.M., inzh., red.; BLIZHEVSKIY, L.A., inzh., red.; SEREBRYAKOV, V.M., inzh., red.; KHARITONOV, A.B., inzh., red.; GLINKA, N.T., inzh., red.; KHISIN, R.I., inzh., red.; SOROKINA, G.Ye., tekhn.red.

[General engineering norms for cutting conditions and time for use in the technical standardization of machining on lathes; lot production] Obshchemashinostroitel'nye normativy rezhimov rezaniya i vremeni dlia tekhnicheskogo normirovaniya rabot na tokarnykh stankakh; seriyos proizvodstvo. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 224 p. (MIRA 13:12)

1. Moscow. Nauchno-issledovatel'skiy institut truda. TSentral'noye byuro promyshlennykh normativov po trudu. 2. Zaveduyushchiy otdelom mashinostroyeniya TSentral'nogo byuro promyshlennykh normativov po trudu pri Nauchno-issledovatel'skom institute truda (for Shapiro).
3. TSentral'noye byuro promyshlennykh normativov po trudu pri Nauchno-issledovatel'skom institute truda (for Mikhaylov, Mosina, Yevlampiyeva).
4. Nauchno-issledovatel'skoye byuro tekhnicheskikh normativov (for Kashintseva, Blizhevskiy). 5. Stankozavod im. S.Ordzhonikidze (for Serbryakov). 6. Moskovskiy stankostroitel'nyy zavod (for Kharitonov).
7. Vsesoyuznyy proyektno-tekhnologicheskiiy institut Tyazhmesh (for Glinka).

(Metal cutting)

(Lathes)

SEREBRYAKOV, V.N.; GALYGIN, Ye.L.; YEGOROV, V.I.

The BSMR boring machine. Gor.zhur. no.4:53-54 Ap '55. (MIRA 8:7)
(Boring machinery)

ACC NR: AP7002679

SOURCE CODE: UR/0109/67/012/001/0158/0161

AUTHOR: Logunov, L. A.; Polyakov, I. V.; Serebryakov, V. N.

ORG: none

TITLE: Distributed tunnel diodes

SOURCE: Radiotekhnika i elektronika, v. 12, no. 1, 1967, 158-161

TOPIC TAGS: tunnel diode, esaki diode, distributed amplifier

ABSTRACT:

The properties of an active transmission line in which the active element is an epitaxially grown distributed tunnel diode (see Fig. 1) are

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UDC: 621.382.233

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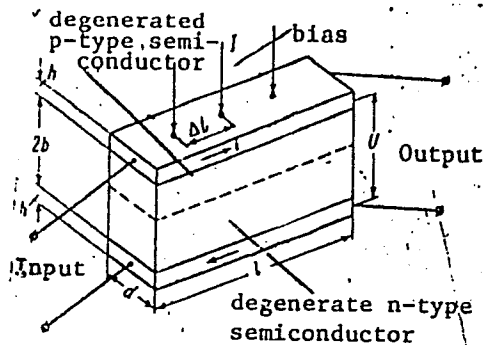


Fig. 1. Distributed semiconductor active transmission line.

pulses and 200—400-usec bias pulses, have shown that a nonattenuated signal may be propagated along this line. The propagation velocity varied (0.4×10^8 — 1.15×10^8 cm/sec) from sample to sample increasing as the

analyzed. The device is made as follows: from the In + 3% Ga + 7% Ge solution a p-type germanium layer was grown on an n-type 400—450- μ Ge plate doped with As whose resistivity was $(6-8) \times 10^{-4}$ ohm/cm. The resistivity of the p-type layer was $\sim 4 \times 10^{-4}$ ohm/cm. The finished samples were 15—20 cm long and 150—250 μ wide. The metallic layers for input and output contacts and biasing were made by depositing a 1- μ layer of Ni. Tests, using five samples driven by 35-nsec triangular current

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L 02992-67 FSS-2/EWT(1)/EWP(m)/FWT(m)/EEC(k)-2/1

ACC NR: AP6033394

SOURCE CODE: UR/0293/66/004/005/0713/0721

AUTHOR: Serebryakov, V. N.

ORG: none

TITLE: On the control of the dynamics of a liquid-gas system under weightlessness conditions by surface effects

SOURCE: Kosmicheskiye issledovaniya, v. 4, no. 5, 1966, 713-721

TOPIC TAGS: fluid dynamics, surface tension, weightlessness, hydrodynamics, surface pressure, gravity

ABSTRACT: This paper deals with one of the hydrodynamic problems related to the effect of weightlessness on the mechanics of a two-phase gas-liquid system. The

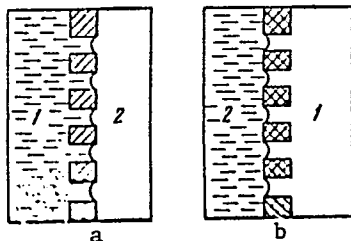


Fig. 1. Schematic diagram of interface stabilization

a - Hydrophilic frame; b - hydrophobic frame;
1 - wettable phase; 2 - non-wettable phase.

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necessity of developing special methods for realizing hydrodynamic processes in gas-liquid systems under weightlessness conditions such as boiling, condensation, bubbling, electrolysis, and others is discussed. The necessary conditions and possibility of their realization by rational utilization of surface energy are examined. It is shown that stabilization of a gas-liquid interface in a disturbed two-phase medium and volume separation of phases can be achieved with the aid of hydrophobic and hydrophilic rigid frames called sieves (see Figs. 1 and 2). Conditions are determined for obtaining optimal properties of sieves. The dynamics of components of a disturbed two-phase system in the presence of interactions with various

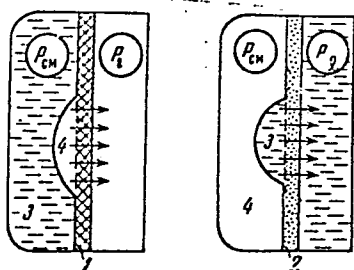


Fig. 2. Schematic diagram of semipermeability

1 - Hydrophobic sieve; 2 - hydrophilic sieve; 3 - liquid, 4 - gas; P_{cm} - pressure in gas-liquid mixture P_r - gas pressure, P_l - liquid pressure.

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ACC NR: AP6033394

species of sieves were theoretically analyzed. The numerical solutions of the boundary-value problem obtained by the ETSVM M-20 computer which describe the

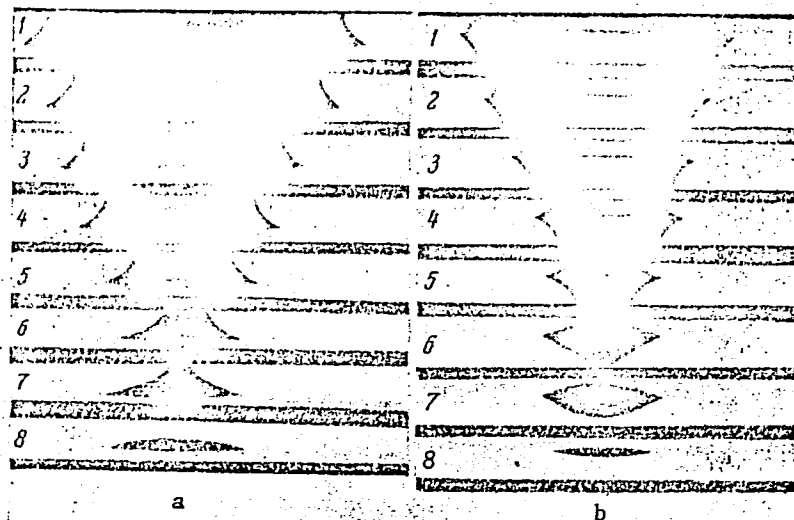


Fig. 3. Dynamics of the liquid

a - Forward direction g from hydrophobic to hydrophilic surface (time in sec);
 1 - 0.0; 2 - 2.0; 3 - 4.0;
 4 - 6.0; 5 - 8.0; 6 - 10.0;
 7 - 10.2; 8 - 10.24;
 b - direction opposite to g :
 1 - 0.0; 2 - 2.0; 3 - 4.0;
 4 - 6.0; 5 - 8.0; 6 - 8.4;
 7 - 8.44; 8 - 9.44.

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L 02992-67

ACC NR:

AP6033394

of the liquid, of an air bubble, and of liquid and air bubble surface pressures are given in graphs. The results of an experimental investigation of the drainage process of a liquid drop and a gas bubble suspended in the slit between hydrophilic and hydrophobic elements both in the same direction and opposite the force of gravity, illustrated by photographs (see Figs. 3 and 4), fully substantiate the theoretical conclusions. They also suggest the possibility of modeling certain elements of weightlessness hydrodynamics in laboratories. Orig. art. has: 11 figures and 12 formulas.

SUB CODE: 20/ SUBM DATE: 26May65/ ORIG REF: 005/ OTH REF: 001/ ATD PRESS: 5099

awm

Card 5/5

BARANENKOVA, A.S.; PONOMARENKO, V.P.; SEREBRYAKOV, V.P.

The skate *Raja spinicauda* Jensen in the Barents Sea. Vop.
ikht. 2 no.1:18-24 '62. (MIRA 15:3)

1. Polyarnyy nauchno-issledovatel'skiy i proyektnyy institut
morskogo rybnogo khozyaystva i okeanografii (PINRO), Murmansk.
(BARENTS SEA--SKATES (FISHES))

RABINOVICH, D.M., inzh.; GURFINKEL', O.L., inzh.; SEREERYAKOV, V.S., inzh.

New technology for the hardening of rail ends. Stal' 20 no. 7:650
Jl '60. (MIRA 14:5)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat.
(Steel—Quenching) (Railroads—Rails)

FREYDENZON, Ye.Z.; RYABOKON', N.K.; RABINOVICH, D.M.; SEREBRYAKOV, V.S.

Properties of welded heat-treated rails. Stal' 22 no.11:1040-
1041 N '62. (MIRA 15:11)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat.
(Railroads--Rails)

SEREBRYAKOV, V.V.

Unusual variant of total double urethra. Urologia 24 no.3:69-70
My-Je '59. (MIRA 12:12)

1. Iz Yakutskoy respublikanskoy bol'nitsy.
(URETHERA--ABNORMITIES AND DEFORMITIES)

SEREBRYAKOV, Viktor Vasil'yevich; SOLODKIN, V.K., red.; GRISHANIN, K.V.,
retsensent; VINOGRADOVA, N.M., red.izd-va; YERMAKOVA, T.T.,
tekhn.red.

[Problems in river hydraulics] Zadachnik po rechnoi gidravlike.
Moskva, Izd-vo "Rechnoi transport," 1959. 150 p. (MIRA 12:3)
(Hydraulics--Problems, exercises, etc.)

137-1958-2-2691

Serebryakov, V.V.
Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 71 (USSR)

AUTHORS: Sharov, M.V., Morozov, B.S., Serebryakov, V.V.

TITLE: Degassing Magnesium Alloys With Argon (Degazatsiya magniyevykh splavov argonom)

PERIODICAL: V sb.: Metallurg. osnovy lit'ya legkikh splavov. Moscow, Oborongiz, 1957, pp 341-359

ABSTRACT A study was made to ascertain methods and conditions of degassing the ML 5 alloy (an aircraft magnesium alloy) that would assure a steady yield of sound castings. The degassing properties of Ar were tested on this alloy. A molten ML 5 alloy containing 15-19 cm³/100 g of H was subjected to degassing by Ar. The heats occurred in a Fe crucible in an electric shaft furnace. The weight of the charge was 6-7 kg (of the alloy). The alloy was wet-fluxed at 750-760°. The Ar was blown through the molten metal, which had been heated to 750-760°. A study was made of the modifying action of CCl₄. The optimum conditions for combined treatment of ML 5 (i.e., degassing with Ar and modification with CCl₄) proved to be: 0.5 percent Ar and 0.4 percent CCl₄ at 750-760° -- which assured sound castings with good mechanical properties.

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137-1958-2-2691

Degassing Magnesium Alloys with Argon

The combined treatment of the melt (which degassed, modified, and refined the ML 5 alloy) made it possible to combine the three operations into one. These methods for degassing alloy ML 5 are economical and do not require the use of materials that are costly or not readily available. It was further established that blowing Ar through the alloy, then modifying it with magnesite (a consecutive treatment), assured casts of a fine crystalline grain and consistent mechanical properties. Neither the combined treatment nor the one following it affected adversely the corrosion resistance of the alloy.

O.B.

1. Magnesium alloys--Degassing
2. Argon--Applications

Card 2/2

SEREBRYAKOV, V.V., Cand Tech Sci -- (diss) "Study of the solubility of hydrogen in alloys of the magnesium-aluminum-zinc system." Mos, 1958, 16 pp (Min of Higher Education USSR. Mos Aviation Technology Inst) 100 copies (KL, 23-58, 107)

- 80 -

AUTHORS: Sharov, M. V., Serebryakov, V. V. SOV/163-58-2-6/46

TITLE: The Solubility of Hydrogen in Magnesium Alloys (Rastvorimost' vodoroda v magniyevykh splavakh)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, No 2, pp. 37-42 (USSR)

ABSTRACT: The conditions of the formation of porosity as dependent on the change of the solubility of hydrogen in magnesium alloys was investigated. To determine the hydrogen content in magnesium alloys the method of hot vacuum extraction was employed. Numerous determinations explain the change of the solubility as dependent on the composition of the alloys and on the temperature. In solid metals the solubility of hydrogen at melting temperature amounts to $19 \text{ cm}^3/100\text{g}$. After melting the solubility of hydrogen increases to $51 \text{ cm}^3/100\text{g}$. The change of the equilibrium solubility of hydrogen in magnesium - aluminum alloys was investigated at temperatures of 20, 750, 800°C as well as at the solidus and liquidus temperature under normal pressure. An intense change of the solubility with an increase in temperature at normal pressure even occurs in alloys in liquid state. From

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The Solubility of Hydrogen in Magnesium Alloys

SOV/163-58-2-6/46

the course of the isothermal lines may be seen that the solubility of hydrogen in magnesium - aluminum alloys with an aluminum content of 6% is high. A further increase of the aluminum content leads to a considerable decrease of the solubility in liquid alloys. The solubility of hydrogen in magnesium-zinc alloys as dependent on the temperature was investigated and it was shown that the solubility curves take a similar course as the curves of the magnesium - aluminum alloys. When the zinc content is increased a higher decrease of the solubility occurs than is the case in magnesium - aluminum alloys. The results obtained point out that the solubility of hydrogen in magnesium alloys is in relation to the porosity of these alloys. Magnesium alloys with a zinc content of 6% tend less to form pores than do those with higher zinc content. Magnesium alloys with 6% aluminum tend more to form pores than do alloys with 3% and 9% aluminum. Ternary alloys have a greater tendency to pore formation than binary systems. There are 4 figures, 1 table, and 5 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskii institut (Moscow Air-
Card 2/3 Technological Institute)

AUTHORS: Sharov, M. V., Serebryakov, V. V. SOV/163-58-3-5/49

TITLE: The Formation of Oversaturated Solutions of Gas in Metals
(Obrazovaniye peresyshchennykh rastvorov gaza v metallakh)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958,
Nr 3, pp 25 - 31 (USSR)

ABSTRACT: By the change of the composition of the alloy a change of the solubility of hydrogen as well as a change of the rate of diffusion processes occur. The experiments carried out demonstrate that at a certain rate of cooling the hydrogen dissolved remains in the liquid metal also when the melt solidifies. The dependence of the residual amount of hydrogen in the solid phase on the cooling rate was investigated. By means of the results obtained curves were plotted which demonstrate that the hydrogen content of the alloys depends on the cooling rate, as does the gas separation in the crystallization of the metal melt. Alloys with an aluminum content exhibit a smaller oversaturation with hydrogen. By adding aluminum and magnesium the diffusion process is accelerated and the formation

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The Formation of Oversaturated Solutions of Gas in Metals SOV/163-58-3-5/49

of oversaturated solutions is prevented. A comparison made between rapidly cooled alloys with 3% and 6% aluminum showed that the alloys with 3% aluminum have a greater tendency to form oversaturated solid solutions with gas. In the case of a slow cooling for the purpose of separating gas and forming gas porosity a previous degassing by means of chlorine, argon, helium or by the addition of calcium to the alloys is necessary. There are 5 figures, 1 table, and 5 references, which are Soviet.

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskii institut (Moscow
Technological Institute of Aircraft Construction)

SUBMITTED: December 10, 1957

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AUTHORS: Sharov, M. V., Serebryakov, Y. V. SOV/32-24-16-21/76

TITLE: A Method for the Determination of the Solubility of Hydrogen in Magnesium and Its Alloys (Metodika opredeleniya rastvorimosti vodoroda v magnii i yego splavakh)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 10, pp 1226 - 1228 (USSR)

ABSTRACT: The solubility of hydrogen in metals and alloys is usually determined according to the absorption method (Ref 1). This method, however, is not applicable in the case of magnesium and its alloys as magnesium exhibits too high a vapor pressure at high temperatures. For this reason the melted metal or the alloy is saturated with hydrogen and then the hydrogen content of a sample is determined (Refs 2-4). Winterchager (Vinterkhager) (Ref 2) took out the sample according to the method of "hardening". According to Ransley (Rensley) (Ref 5), however, on the occasion of crystallisation of the metal saturated with hydrogen not all the hydrogen always remains in the solid solution.

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A Method for the Determination of the Solubility of
Hydrogen in Magnesium and Its Alloys

SOV/32-24-10-21/70

The imperfection of the device for the saturation of the melt with hydrogen is mentioned as an essential deficiency in the work carried out before. A device is described which makes it possible to maintain a hydrogen pressure of 1 atmosphere above the metal melt. The device is shown in a figure. In the description it is mentioned that for the determination of the hydrogen content of the samples the method by A.P. Gudchenko (Refs. 6,7) was used. Comparative experiments according to the method of extraction were also made; the results (given in a table) for the main part differ for only by 5% at most. There are 3 figures, 1 table, and 7 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskii institut (Moscow Aviation-Technological Institute)

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A Method for the Determination of the Solubility of
Hydrogen in Magnesium and Its Alloys

SOV/32-24-10-21/70

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GUDCHENKO, A.P., kand.tekhn.nauk; SEREBRYAKOV, V.V., kand.tekhn.nauk

Determining the hydrogen content in magnesium. Trudy MATI no. 49:160-
169 '61. (MIRA 14:5)

(Magnesium—Hydrogen content)

SHAROV, M.V., kand.tekhn.nauk; SEREBRYAKOV, V.V., kand.tekhn.nauk

Hydrogen in the ML5 alloy. Trudy MATI no. 49:170-179 '61.

(MIRA 14:5)

(Magnesium alloys—Hydrogen content)

SEREBRYAKOV, V.V., kand.tekhn.nauk; RATNER, A.D., inzh.

Investigating the supersaturated solution of hydrogen in the ML5 alloy. Trudy MATI no.63:120-134 '65.

(MIRA 18:10)

L 28853-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JXT(CZ)

ACC NR: AT6011853

(N)

SOURCE CODE: UR/2536/65/000/063/0120/0134

AUTHOR: Serebryakov, V. V. (Candidate of technical sciences); Ratner, A. D.

(Engineer)

ORG: none*

TITLE: Investigation of a supersaturated solution of hydrogen in ML5 alloy

SOURCE: *Moscow. Aviatsionnyy tekhnologicheskii institut. Trudy, no. 63, 1965.

Proizvodstvo otlivok iz legkikh splavov (Production of castings from light alloys), 120-134

TOPIC TAGS: cooling rate, magnesium alloy, solid solution, hydrogen, metal casting, gas diffusion, grain size / ML5 magnesium alloy

ABSTRACT: Rapid cooling of a hydrogen-saturated metal in a mold causes the retention of part of the hydrogen in the solid solution. By regulating the cooling rate a solid solution of the desired degree of supersaturation may be obtained and, by preventing the release of hydrogen, particularly during the crystallization period, the formation of gaseous porosity in the casting may be prevented. In this connection, the authors investigated the stability of the resulting supersaturated solution at various temperatures as well as the effect of the hydrogen present in the solid solution on the properties of the alloy. Saturation with hydrogen was accomplished by

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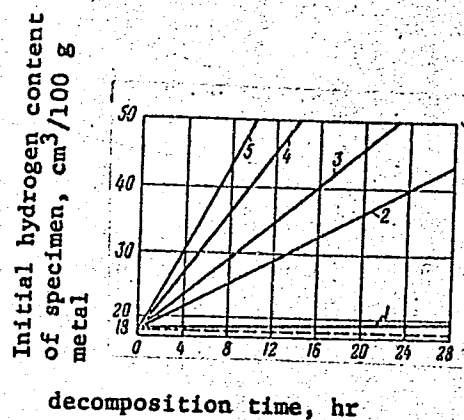


Fig. 1 Decomposition time of supersaturated solution as a function of initial hydrogen content of specimen:

- 1 - $s=18+0.08\tau$ [τ -- time in hours since onset of decomposition], 20°C; 2 - $s=18+0.96\tau$, 75°C; 3 - $s=18+1.41\tau$, 100°C; 4 - $s=18+2.2\tau$, 150°C; 5 - $s=18+3\tau$, 200°C

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L 28853-66

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passing a jet of this gas from a cylinder through the melt. The cast specimens were heated at temperatures of 200, 150, 100, 75°C and the time of decomposition of the supersaturated solid solution was investigated as a function of these temperatures as well as of room temperature and also as a function of the hydrogen content of the specimen (Fig. 1). It is thus established that the decomposition of the supersaturated solid solution proceeds at a faster rate when the temperatures are higher and sharply decelerates when the temperatures are lower. Formulas are derived for calculating the coefficient of diffusion of hydrogen in the ML5 alloy and determining the decomposition time of the solution in a casting with an initial hydrogen content of 25 cm³/100 g metal at temperatures of 20 and 145°C. It is established that a hydrogen content of up to 33 cm³/100 g metal somewhat enhances the ultimate strength and hardness of the alloy and contributes to a smaller grain size. If the hydrogen content exceeds this limit, however, the grain size increases and micropores appear, and this reduces the alloy's mechanical properties. Orig. art. has: 11 figures, 5 tables.

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 001

Card 3/3 *ce*

SEREBRYAKOV, V.V.; SHIRKOV, D.V.; KOBKOVA, V.I., red.

[Properties of resonance solutions to equations of pion-pion scattering] Svoistva rezonansnykh reshenii pion-pionnogo rasseianiia (TF-4). Novosibirsk, Akad. nauk SSSR, Sibirskoe otd-nie In-t matem. s vychislitel'nym tsentrom, 1961. 6 p. (MIRA 15:7)
(Integral equations) (Mesons—Scattering)

SEREBRYAKOV, V.V.; SHIRKOV, D.V.; KOVKOVA, V.I., red.

[Some resonance solutions to equations of low-energy pion-pion scattering] Nekotorye rezonansnye reshenia uravnenii nizkoenergeticheskogo pion-pionnogo rasseianiia (TF-3). Novosibirsk, Akad. nauk SSSR, Sibirskoe otd-nie In-t matem.s vychislitel'nykh tsentrom, 1961. 24 p. (MIRA 15:7)
(Integral equations) (Mesons--Scattering)

GINZBURG, I.F.; SEREBRYAKOV, V.V.

Electromagnetic corrections to weak interactions. Zhur.
eksp. i teor. fiz. 40 no.6:1738-1745 Je '61. (MIRA 14:8)

1. Institut matematiki s Vychislitel'nyy tsentrom
Sibirskogo otdeleniya AN SSSR.

(Electromagnetic theory)

(Nuclear reactions)

YEFREMOV, A.V.; SEREBRYAKOV, V.V.; SHIRKOV, D.V.; SARANTSEVA, V.R.,
tekhn. red.

Low-energy pion-pion scattering. Dubna, Ob"edinennyi in-t iader-
nykh issledovani, 1962. 8 p.

1. Institute for Mathematics, Siberian Branch U.S.S.R. Academy of
Sciences, Novosibirsk (for Shirkov).
(No subject heading)

S/056/62/042/002/045/055
B108/B138

AUTHORS: Serebryakov, V. V., Shirkov, D. V.

TITLE: Some resonance solutions of the equations for low energy pion-pion scattering

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 2, 1962, 610 - 621

TEXT: Solutions of the linearly decreasing branch ($\text{Re}A_i(z) \approx l_i c/z$) of the equations

$$A_i(z) = \frac{1}{\pi} \int_1^{\infty} dz' \left\{ \frac{\text{Im} A_i(z')}{z' - z} + \sum_k \frac{b_{ik} \text{Im} A_k(z')}{z' + z} \right\} \quad (1.1)$$

($i = 0, 1, 2$).

for low-energy pion-pion scattering are considered for the limiting case of resonance ($\lambda \rightarrow 0$). c is an arbitrary coefficient. $A_0 = A_0^0$, $A_1 = A_1^1$, $A_2 = A_0^2$, $z = 2v + 1 = 2q^2/\mu^2 + 1$; $b_{ik} = \delta_{ik} + l_i n_k$; $l_0 = -1/3$; $l_1 = -1/18$; $l_2 = 1/6$; $n_0 = 2$; $n_1 = 9$; $n_2 = -5$. In solutions which for $z > 1$ have the

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B108/B138

Some resonance solutions of the ...

form $A_i(z) = \lambda / [\Phi_i(z, \lambda) + \lambda I_i(z, \lambda) - i\lambda K(z)]$ the I_i which decrease not more rapidly than logarithmically with $|z| \rightarrow \infty$ can be neglected in the case of small λ . The fractional linear functions Φ_i have a non-vanishing limit $\Phi_i(z, 0) = f_i(z)$. The real parts of the partial amplitudes can therefore be expressed in terms of fractional linear functions and the imaginary parts by δ -functions. It is possible to neglect the I_i terms with respect to the f_i in the case of power asymptotic expressions but not in the case of logarithmic ones. Power asymptotic expressions with one resonance in each partial amplitude are obtained from

$$\frac{\text{Re } A_i}{\lambda} = \frac{\alpha_i}{z_i - z} + \frac{\alpha_i}{z_i + z} + l_i \left\{ \frac{2z_0}{z + z_0} + \frac{9\alpha_i}{z + z_1} - \frac{5\alpha_i}{z + z_2} \right\}. \quad (3.1)$$

on the conditions $\lambda \alpha_i > 0$, $z_i > 1$, where $\alpha_i = -1/f'_i(z_i)$. Results in the range of small λ for solutions with δ -functions can be obtained by means of the N/D technique (G. Chew, S. Mandelstam. Phys. Rev., 119, 467, 1960) after its modification for solutions with exponential decrease:

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Some resonance solutions of the ...

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B108/B138

$$A_l(z) = N_l(z)/D_l(z), \quad (4.1)$$

$$N_l(z) = A_l(0) + \frac{z}{\pi} \int_{-\infty}^{-1} \frac{\text{Im } A_l(z') D_l(z')}{z'(z'-z)} dz', \quad (4.2)$$

$$D_l(z) = 1 - zg_l - \frac{z}{\pi} \int_1^{\infty} \frac{K(z') N_l(z')}{z'(z'-z)} dz'. \quad (4.3).$$

A connection is established between solutions with power asymptotic and solutions with logarithmic asymptotic expressions. It is shown that the exponential branches are limiting cases of logarithmic branches when the CDD-type zeros (L. Castillejo, R. Dalitz, F. Dyson. Phys. Rev., 101, 543, 1956) shifts to infinity. Experimental data on the width of the p-resonance can be used to determine the role of high-energy contributions in the low-energy region and to give information on the energy dependence of the phase δ_0^0 . Chu Hung-yüan, A. V. Yefremov, and I. F. Ginzburg are

thanked for discussions. There are 4 figures, 2 tables, and 18 references: 5 Soviet and 13 non-Soviet. The five most recent references to English-language publications read as follows: J. Anderson et al. Phys. Rev. Lett., 6, 365, 1961; D. Stonehill et al. Phys. Rev. Lett., 6, 624, Card 3/4

Some resonance solutions of the ...

S/056/62/042/002/045/055
B108/B138

1961; T. N. Truong. Phys. Rev. Lett., 6, 308, 1961; A. R. Erwin et al.
Phys. Rev. Lett., 6, 628, 1961; S. Bergia et al. Phys. Rev. Lett., 6,
367, 1961.

ASSOCIATION: Institut matematiki Sibirskogo otdeleniya Akademii nauk
SSSR (Institute of Mathematics of the Siberian Department
of the Academy of Sciences USSR)

SUBMITTED: September 21, 1961

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СЕРГЕЕВ, В. В.
YEFREMOV, A. V. , SERGEYAKOV, V. V., and SHIRKOV, D. V.

"Pion-Pion Scattering of Low Energies"

report presented at the Intl. Conference on High Energy Physics, Geneva,
4-11 July 1962

Joint Institute for Nuclear Research
Lab. of Theoretical Physics

LUKIN, L.P.; SEMERYAKOV, V.V.; KOBKOVA, V.I., red.

[Solutions to integral equations describing low-energy
pion-pion scattering] Resheniia integral'nykh uravnenii
nizkoenergeticheskogo pion-pionnogo rasseianiia. Novo-
sibirsk, In-t matem. s vychislitel'nykh tsentrom, 1962.
10, xix p.

(MIRA 17:6)

LUKIN, I.P.; SPREBRYAKOV, V.V.

Solution of a system of nonlinear singular integral equations.

Sib. mat. zhur. 5 no.6:1422-1424 N-D '64. (MIRA 17:12)

PAVLOVSKIY, V.I.; SEREBRYAKOV, Ye.B.

Nomogram for determining the shape, dimensions, and excessive density of two-dimensional bodies of rectangular cross section based on a U_{xz} curve. Geofiz. razved. no.6:12-18 '61. (MIRA 15:4)

(Gravity prospecting)

PAVLOVSKIY, V.I.; SEREBRYAKOV, Ye.B.

Nomogram for the determination of the form, dimensions, and excess density of two-dimensional bodies of rectangular cross sections according to V_{zz} curves. Geofiz.razved. no.7:53-56 '62.

(MIRA 15:7)

(Gravity prospecting)

PAVLOVSKIY, V.I.; SEREBRYAKOV, Ye.B.

Nomogram for determining the elements of sloping strata of finite depth with axial magnetization along the Z_a curves. Razved. geofiz. no.1:49-55 '64. (MIRA 18:7)

PAVLOVSKIY, V.I.; SPYEBRYAKOV, V.B.

Nomogram for the determination of the occurrence of vertical
stage elements according to V_{xz} curves with smooth density
variation in the contact zone. Razved. geofiz. no. 3:72-77
'65. (MIRA 18:8)

PAVLOVSKIY, V.I.; SEREBRYAKOV, Ye.B.

Nature of the gravity field over the vertical stage in the smooth
variation of density in a transition zone. Razved. geofiz.
no.5:47-55 '65. (MIRA 18:9)

NEPESOV, A.A.; SEREBRYAKOV, Ye.P.

Effect of the removal of the thyroid gland on the endurance and the dehydration degree of tissues under conditions of acute overheating.
Izv.AN Turk.SSR.Ser.biol.nauk no.3:60-62 '62. (MIRA 15:9)

1. Institut zoologii i parazitologii AN Turkmenskoy SSR.
(THYROID GLAND) (HEAT--PHYSIOLOGICAL EFFECT)

SEREBRYAKOV, Ye.P.

Effect of dehydration on changes in the volume of aquatic media and some blood indices in animals. Izv. AN Turk. SSR. Ser. biol. nauk no.3:84-86 '63. (MIRA 17:1)

1. Institut krayevoy meditsiny AN Turkmenskoy SSR.

NEPESOV, A.A.; SEREBRYAKOV, Ye.P.

Effect of iodine as a microelement on some indicators of the
blood of thyroidectomized animals exposed to heat. Zdrav.
Turk. 7 no.4:8-10'Ap'63. (MIRA 16:6)

1. Iz instituta krayevoy meditsiny AN Turkmenskoy SSSR
(dir. A.Kh.Babayeva).

(IODINE---PHYSIOLOGICAL EFFECT)

(BLOOD---ANALYSIS AND CHEMISTRY) (THYROID GLAND)

(HEAT---PHYSIOLOGICAL EFFECT)

SEREBRYAKOV, Yu

SEREBRYAKOV, Yu., gvardii inzhener-podpolkovnik; YEVTYUKHIN, I., inzhener-podpolkovnik.

For an efficient operation of automobiles. Voen.vest. 33 no.16:
31-33 N '53. (MIRA 10:10)
(Automobiles--Maintenance and repair)

SEREBRYAKOV, YU., (Engr-Lt Col) *(Reviewer)*

Serebryakov, Yu., Engr-Lt Col - Author of article, "Means of Increasing the Interrepair Mileage of Vehicles," which critically reviews the brochure of the same title, written by Engr-Col V. A. IYERUSALINSKIY, (Voyenny Vestnik, No. 3, Mar 54)

SO: SUM 175, August 6, 1954

YEVTYUKHIN, I.Ye.; SEREBRYAKOV, Yu.F.; KONKIN, P.I., podpolkovnik, redaktor; KALACHEV, S.G., ~~tekhnicheskiy~~ redaktor

[Driving automobiles in columns] Vozhdenie avtomobilia v kolonne.
Moskva, Voen. izd-vo Ministerstva oborony Ssiuza SSR, 1955. 79 p.
(Automobile drivers) (MLRA 8:7)

SEREBRYAKOV, Yu., inzhener-podpolkovnik.

Inspection of automotive and tractor equipment. Voen.vest.
36 no.11:39-42 N '56. (MLRA 10:2)

(Automobiles, Military)

SHREBRYAKOV, Yu., inzh.-podpolkovnik..

Driving automobiles on bad roads. Za rul. 16 no.2:14-15 F '58.
(Automobile drivers) (MIRA 11:3)

YEVTYUKHIN, Ivan Yegorovich, ~~SREBRYAKOV, Yuriy Fedorovich~~; KONKIN, P.I.,
polkovnik, red.; STREL'NIKOVA, M.A., ~~tekhn.red.~~

[Truck driving in convoys] Vozhdenie avtomobilia v kolonne.
Izd.2., ispr. i dop. Moskva, Voen.izd-vo M-va obor.SSSR, 1959.
94 p. (MIRA 12:10)
(Russia--Army--Transportation) (Motortrucks)

VLASOV, Khristian Vasil'yevich; YEVTYUKHIN, Ivan Yegorovich; SEREBRYAKOV, Yuriy Fedorovich; GOLOSHCHAPOV, I.M., red.; KONOVALOVA, Ye.K., tekhn.red.

[Driving motor vehicles under difficult conditions] Vozhdenie avtomobilia v slozhnykh usloviakh. Moskva, Voen.izd-vo M-va obor.SSSR, 1959. 133 p. (MIRA 13:3)
(Automobile drivers)

SEREBRYAKOV, Yu., inzhener-podpolkovnik

Vehicles move along snowy roads. Starsh.-serzh. no.1:33-34
Ja '61. (MIRA 14:7)
(Automobiles, Military--Cold weather operation)

ARESHKIN, Grigoriy Ivanovich; GORYACHEV, Vladimir Trifonovich;
YEVTYUKHIN, Ivan Yegorovich; KONSTANTINOV, Sergey Leonidovich;
LAVROV, Oleg Mikhaylovich; PERLIN, Vladimir Sergeyevich;
SEREBRYAKOV, Yuriy Fedorovich; KOSOROTOV, B.V., inzh.-polkovnik
zapasa, red.; ZUDINA, M.P., tekhn. red.

[Training manual for motor vehicle drivers] Posobie dlia pod-
gotovki voditel'ia avtomobil'ia. Moskva, Voen.izd-vo M-va obor.
SSSR, 1962. 501 p. (MIRA 15:4)
(Automobile drivers) (Vehicles, Military)

VLASOV, Khrisanf Vasil'yevich; YEVYUKHIN, Ivan Yegorovich;
SEREBRYAKOV, Yuriy Fedorovich; OKUNEV, Yu.K., red.

[Motor-vehicle driving under difficult conditions] Vozh-
denie avtomobilia v slozhnykh usloviakh. 1zd.2., dop.
Moskva, Voenizdat, 1964. 166 p. (MIRA 17:9)

SEREBRIAKOV, Yu. I.

А. В. Широчин

Разработка технических решений по передаче на телеграфных линиях сигналов радиотелеграфных устройств с использованием системы оптического телеграфирования

Г. М. Поляков

Некоторые вопросы общей теории сетей управления и связи

М. И. Жданов

Механизмы работ по строительству и эксплуатации линий связи и радиосвязи на маломощных источниках

12 июня

(с 10 до 16 часов)

Б. П. Терентьев

М. Е. Волковская

Застрахованный телеграфный аппарат

З. Б. Мещин

В. И. Корсаков

Застрахованные детекторы оптических сигналов

Р. А. Худяков

Анализ и выбор электрической схемы фототелеграфного аппарата с оптоэлектронической системой управления

24

12 июня

(с 18 до 22 часов)

Г. А. Емельянов

О законах распространения оптических телеграфных сигналов при земной и космической передаче и на телеграфе оптического телеграфирования

А. С. Юсупов

Повышение коэффициента использования канала связи при фототелеграфировании

В. И. Корсаков

Комбинированные системы телеграфного управления

4. СЕКЦИЯ ТЕЛЕВИДЕНИЯ

Руководитель С. И. Катков

9 июня

(с 10 до 16 часов)

В. Г. Калашов

А. С. Антеев

Телевизор на полупроводниковых приборах

Ю. И. Сербинский

Визуальный канал оптической передачи

25

report submitted for the Centennial Meeting of the Scientific Technological Society of
Radio Engineering and Electrical Communications in A. S. Popov (VSEKIS), Moscow,
8-12 June, 1959

SEREBRYAKOV, Yu.I.

Vertical scanning output cascade. Elektrosviaz' 14 no.1:
32-39 Ja '60. (MIRA 13:5)
(Television--Receivers and reception)
(Electric transformers)

KRIVOSHEYEV, Mark Iosifovich; SEREBRYAKOV, Yu.I., otv. red.;
MAKSAKOVA, A.I., red.

[Methods for evaluating and measuring linear and nonlinear distortions in a video channel] Sposoby otsenki i izmereniia lineinykh i nelineinykh iskazhenii, voznikaushchikh v videokanale: lektsiia dlia studentov-zaochnikov. Moskva, Redaktsionnyi otдел VZEIS, 1961. 95 p. (MIRA 16:5)
(Television) (Amplifiers (Electronics))
(Pulse techniques (Electronics))

SEREBRYAKOV, Yuriy Ivanovich; YEFIMOV, A.P., otv. red.; MAKSAKOVA,
A.I., red.

[Synchronization in television; lecture for students of the
6th course of the Federation of Radio Sport and Broadcasting
and in courses for improvement for auditors of qualifications]
Sinkhronizatsiia v televidenii; lektsiia dlia studentov VI kur-
sa FRSiV i slushatelei kursov povysheniia kvalifikatsii. Mo-
skva, Vses. zaachnyi elektrotekhn. in-t sviazi, 1963. 27 p.
(MIRA 17:4)

L 15934-66 EWT(m)/EWP(1) IJP(c) DM

ACC NR: AP6005523

SOURCE CODE: UR/0089/66/020/001/0003/0008

AUTHOR: Voskresenskiy, G. V.; Koroza, V. I.; Serebryakov, Yu. N.

ORG: none

TITLE: Radial broadening of the beam in a linear electron accelerator due to the action of an asymmetric wave

SOURCE: Atomnaya energiya, v. 20, no. 1, 1966, 3-8

TOPIC TAGS: electron accelerator, linear accelerator, electron beam, electron optics

ABSTRACT: The authors study the mechanism which gives rise to radial dispersion of an electron beam in a high-current linear accelerator. The calculations are based on analysis of the properties of hybrid asymmetric waves in the moderator section of the accelerator and excitation of these waves by the electron beam. Consideration is given to the dynamics of the electrons in the field of the asymmetric wave generated by the beam of particles. It is shown that the amplitude of radial displacement from the axis increases almost exponentially with respect to the time of

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UDC: 621.384.6

L 15934-66

ACC NR: AP6005523

injection if attenuation in the field of the moderator section is disregarded. The effect of damping on the dynamics of the radial motion of particles is evaluated. Calculations of dispersion show that there is a rapid increase in the radial dimensions of the beam as a function of time even when the mathematical expectation for distribution of the initial deviations is zero, i.e. for the case of symmetric beam injection. We are deeply grateful to E. L. Burshteyn for constant interest in the work and consultation. Orig. art. has: 3 figures, 20 formulas.

SUB CODE: 20/ SUBM DATE: 11Jun65/ ORIG REF: 003/ OTH REF: 006

FW

Card 2/2

RYBALKO, K.S.; PEREL'SON, M.Ye.; SHRETER, A.I.; VLASOV, M.I.; GUBANOV,
I.A.; PIMENOV, M.G.; PIMENOVA, R.Ye.; NOVOSEL'TSEVA, N.P.;
SEREBRYAKOVA, A.A.

Preliminary evaluation of plants of the family Compositae
for their sesquiterpenic lactone content. Apt. delo 14
no.5:37-41 S-O '65. (MIRA 18:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut lekarstvennykh
i aromaticeskikh rasteniy, Bittsu, Moskovskoy oblasti.

BAYDAL, M.Kh.; SEREKBYAKOVA, A.A.

Climatic characteristics of cold waves during wintertime in Kazakhstan.
Trudy KazNIGMI no.5:37-43 '55. (MLRA 9:10)
(Kazakhstan--Climate)

СЕРБРИЯКОВА, А.А.

SEREBRYAKOVA, A.A.; GRMBENYUK, Ye.V.

Aerosynoptic analysis of conditions for heavy rainfalls in the
northern region of Kazakhstan. Trudy Kaz. NIGMI no.6:60-67 '66.
(Kazakhstan--Rain and rainfall) (MLRA 10:9)

KOLODTSEV, Kh.I., kand.fiziko-matematicheskikh nauk; SEREBRYAKOVA, A.G.,
inzh.

Reduction of CO₂ with carbon at high temperatures. Teploenergetika
8 no.1:34-37 Ja '61. (MIRA 14:4)

1. Vsesoyuznyy teplotekhnicheskii institut.
(Carbon dioxide) (Carbon)

⁸
Serebyakova, A. G.
^

Serebyakova, A. G. "Cardiac ulcers", Sbornik trudov, posvyashch. prof. Savinykh,
Tomsk, 1948, p. 186-95.

So: U-3261, 10 April 1953, (Letopis 'Zhurnal 'nykh Statey, No. 12, 1949).

BEREBRYAKOVA, A. G., Docent; KANSHIN, N. N.

Pregnancy, Extrauterine

Abdominal pregnancy with implantation of fertilized egg into the liver. Akush. i gin., no. 5, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified

SEREZBRYAKOVA, A. G.

Diagnosis of ulcers of the cardial region. Khirurgiia, Moskva no.4:65-
73 Apr 1953. (CIMI 24:4)

1. Docent. 2. Of the Hospital Surgical Clinic (Director -- Honored
Worker in Science Prof. A. G. Savinykh, Active Member AMS USSR), Tomsk
Medical Institute imeni V. M. Molotov.

SREBRYAKOVA, Angelina Gavrilovna.

Academic degree of Doctor of Med Sci, based on her defense, 9 June 1954, in the Council of the Tomsk State Med Inst imeni Molotov, of her dissertation entitled: "Ulcers of the cardinal area and their significance in the development of cancer of the cardium .

Academic degree and/or title: Doctor of Sciences

SO: Decisions of VAK, List no 6, 19 Mar 55, Byulleten' MVC SSSR, No. 14, July 56 Moscow pp 4-22, Uncl.
JPRS/NY-429

SEREBRYAKOVA, A.G., dotsent (Tomsk)

Development of cancer in cardial ulcer. Klin.med. 32 no.3:45-52 Nr '54.
(MLRA 7:5)

1. Iz gospital'noy khirurgicheskoy kliniki (zaveduyushchiy - deystvitel'
nyy chlen Akademii meditsinskikh nauk SSSR professor A.G.Savinykh)
Tomskogo meditsinskogo instituta im. V.M.Molotova. (Ulcers) (Cancer)

ZIVERT, K.N., prof. med. nauk.; ~~SEEBRYAKOVA~~, A.G., dots., doktor. med. nauk.;
YEMEL'YANOVA, Ye. A., dots.; MASYUKOVA, Ye. M., kand. med. nauk.;
ROGACHEVA, V.S.

Andrei Grigor'evich Savinykh; on his 70th anniversary of his birthday.
Vop. onk. 5 no.1:127-128 '59. (MIRA 12:3)
(SAVINYKH, ANDREI GRIGOR'EVICH, 1888-)

SEREBRYAKOVA, A.G., doktor med.nauk (Tomsk)

Complications in ulcers of the cardial area of the stomach and lower portion of the esophagus. Klin.med. 37 no.11:37-42 N '59.

(MIRA 13:3)

1. Iz gosspital'noy khirurgicheskoy kliniki (zaveduyushchiy - deystvitel'nyy chlen AMN SSSR prof. A.G. Savinykh) Tomskogo meditsinskogo instituta.

(PEPTIC ULCER compl.)

(ESOPHAGUS diseases)

SEREBRYAKOVA, A.G., doktor med.nauk (Tomsk, pr. Timiryazeva, d.32, kv.2)

Immediate and late results of surgical treatment of ulcer of the
cardial area [with summary in English]. Vest.khir. 82 no.2:33-38
F '59. (MIRA 12:2)

1. Iz khirurgicheskoy kliniki (zav. - prof. A.G. Savinykh) Tomskogo
meditsinskogo instituta.

(GASTRECTOMY, in various dis.
peptic ulcer, cardiac area, immediate &
remote results (Rus))

SEREBRYANAYA, A.G.

New foreign drugs. Med. prom. 15 no.9:60-64 S '61. (MIRA 14:9)
(DRUGS)

SEREBRYAKOVA, A. G. (Tomsk, pr. Kirova, 37, kv. 4); IVANOVA, V. G.
(Tomsk, Altayskaya ul., 48, kv. 2)

~~and~~
Role of multiple pretumorous diseases in the development of
cancer of the stomach. Vop. onk. 8 no.3:57-61 '62.
(MIRA 15:4)

1. Iz kafedry gosptal'noy khirurgii (zav. - deystv. chl. AMN
SSSR, prof. A. G. Savinykh) Tomskogo meditsinskogo instituta.

(STOMACH—CANCER) (STOMACH—DISEASES)

SEREBRYAKOVA. A.P.; FILITIS, L.N.; UTKIN, L.M.

Lignans from junipers (*Juniperus communis*) of the Soviet Union. Zhur.
ob.khim. 31 no.5:1731-1734 My '61. (MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut imeni S.Ordzhonikidze.
(Lignans). (Juniper)

UTKIN, L.M.; SEREBRYAKOVA, A.P.

Isoflavone-glycoside from Piptanthus nanus M.Pop. Khim.prirod.soed.
1:70-72 '65. (MIRA 18:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut im. S.Ordzhonikidze.

UTKIN, L.M.; SEREBRYAKOVA, A.P.

Flavone glycoside from *Stizolophus balsamita* (Lam) A. Takht.
Zhur. ob. khim. 34 no.10:3496-3499 0 '64.

(MIRA 17:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut imeni S. Ordzhonikidze.

KUDRYAVTSEV, F.S.; CHISTOVA, Z.Ya.; KULIKOVA, N.S.; BURINSKAYA, N.D.;
SEREBRYAKOVA, A.S.

Use of furazolidone and streptomycin in treating respiratory
Mycoplasma infection in chickens. Veterinariia 42 no.8:38-40
Ag '65. (MIRA 18:11)

1. Nauchno-proizvodstvennaya laboratoriya po bor'be s
boleznyami molodnyaka sel'skokhozyaystvennykh zhivotnykh
Ministerstva sel'skogo khozyaystva RSFSR.

SEREBRYAKOVA, A. V.

U S S R

Investigation of the Voltage Balance in Baths for the Electrolytic Production of Manganese from Aqueous Solutions. N. P. Diev, G. Yu. Sidorze, A. V. Serabryakova, and R. A. Mindodashvili (Zhur. Prikl. Khim., 1954, 27, (8), 860-864).—[In Russian]. In order to study the possibility of increasing the current efficiency and decreasing the cell voltage drop in the electrolytic prodn. of Mn, D. et al. have measured the values of the quantities which together make up the bath terminal voltage $E_t = (E_a - E_c) + E_e + E_d + E_k$, where E_a is the anode potential, E_c the cathode potential, E_e the voltage drop in the electrolyte, E_d the voltage drop in the electrodes, diaphragm, and contacts. Two baths were studied: (a) after

M. P. DeLa

8 hr. operation of the cathode, the catholyte then contg. (g./l.): Mn (as $MnSO_4$) 20.4; $(NH_4)_2SO_4$ 201.9; and the anolyte contg. Mn (as $MnSO_4$) 17.3; $(NH_4)_2SO_4$ 183; free H_2SO_4 5.14; temp. 28°C.; and (b) in the first hr.'s operation, with compn.: catholyte Mn 26.4; $(NH_4)_2SO_4$ 186.2; anolyte Mn 19.5; $(NH_4)_2SO_4$ 167.7; free H_2SO_4 5.30; temp. 27°-27.5°C. The cathodes were of stainless steel (std. 290-410 amp./m.²), the anodes of Pt. The electrode potentials were measured with the Ag/AgCl electrode, at various points on the electrode surface, the mean values being: (a) E_c -1.381 V., E_a 2.333 V.; and (b) E_c -1.428 V., E_a 2.125 V. The back e.m.f. in (a) and (b) were thus 3.714 and 3.553 V., resp. The mean values of E_c were as follows: between cathode and diaphragm (a) 0.4313; (b) 0.4376 V.; between anode and diaphragm, (a) 0.4618; (b) 0.4943 V. Mean values of E_c for (a) and (b) were 0.641 and 0.371 V., resp. For (a); E_a = 0.293 V., made up as follows: cathode bar to cathode comb 0.008 V., cathode comb to cathode 0.08 V., anode bar to anode 0.12 V., active fall on cathode 0.087 V.; for (b), E_a = 0.148 V., made up of 0.031, 0.059, 0.0015, and 0.037 V., resp. The active fall on the anode (~0.002 V.) was neglected. The bath voltage, (a) 5.3, (b) 5.05, are therefore made up as follows (in % for a and b, resp.): back e.m.f. in electrolysis 69.8, 70.3; voltage drop in the electrolyte 15.0, 19.5; voltage drop in diaphragm 10.16, 7.3; voltage drop in contacts and connectors, 4.95, 2.0.

—O. V. E. T.—

SEREBRYAKOVA, A.X.

4

✓ Colorimetric determination of the ⁷iron content of petroleum coke from a sulfur-containing crude oil. A. Serbryakova, M. Shershelevich, and L. Nikulina. Notoski Neftyanoi Tekh. i Neftepererabotka 1955, No. 5, 31-3. 3
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Fuel

dm mji

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SE REBRYAKOVA, A.V.
SEREBRYAKOVA, A.V.; PAZDNIKOV, P.A.

Chlorination of magnesium oxide in molten chlorides. Izv. vost. fil.
AN SSSR no.12:45-53 '57. (MIRA 11:1)

1. Ural'skiy filial AN SSSR.
(Magnesium—Metallurgy) (Chlorination) (Carnallite)

SEREBRYAKOVA, A.V.

Studying certain problems of chlorinating titanium materials in
molten chlorides. Trudy Inst. met. UFAN SSSR no.2:55-60 '58.
(MIRA 12:4)

(Titanium ores)

(Chlorination)

SEREBRYAKOVA, A.V.

Serebryakova, A.V., and V.V. Yefremkin (Urals Branch, Academy of Sciences USSR). A Study of Some Questions of the Chlorination of Titaniferous Materials in a Fusion of Mixed Chlorides, p. 78. Titan i yego splavy. vyp. II: Metallurgiya titana (Titanium and Its Alloys. No. 2: Metallurgy of Titanium) Moscow, Izd-vo AN SSSR, 1959. 179 p.

This collection of papers deals with sources of titanium; production of titanium dioxide, metallic titanium, and titanium sheet; slag composition; determination of titanium content in slags; and other related matters. The sources of titanium discussed are the complex sillimanite ores of the Kyakhtinskoye Deposit (Buryatskaya ASSR) and certain aluminum ores of Eastern Siberia. One paper explains the advantages of using ilmenite titanium slags for the production of titanium dioxide by the sulfuric acid method. Production of metallic titanium by thermal reduction processes (hydrogen, magnesium, and carbon reduction) is the subject of several papers, while other papers are concerned with the electrolytic production of titanium. Other subjects dealt with are interaction of titanium with water vapor and with hydrogen and the determination of titanium in slags.

SEREBRYAKOVA, A.V.; YEFREMKIN, V.V.

Studying certain problems of chloridizing titanium materials in
fused chlorides. Titan i ego splavy no.2:78-81 '59.
(MIRA 13:6)

1. Ural'skiy filial AN SSSR.
(Titanium compounds) (Chlorination)

SEREBRYAKOVA, A.V.; PAZDNIKOV, P.A.

Effect of temperature on the rate of chlorinating magnesium
oxides in fudes chlorides. Trudy Inst.met.UFAN SSSR no.3:
111-119 '59. (MIRA 13:4)
(Ore dressing) (Magnesite)

СЕРЕБРЯКОВА, А.В.

PLANE 1 BOOK EXPLANATION 807/4613

Академия наук СССР. Ученый труд. Институт металлургии

Вопросы металлов и металловедения. Сер. 1. Металлургия
(Problems of Metallurgy and Metallurgy. Ser. 1. Metallurgy)
(Moscow: Metallurgizdat, 1960. 194 p. (Ser. 1. Metallurgy, Vol. 5) Extra
also included. 1,000 copies printed.

Берг, М.И., М. И. Кошар, and V. P. Chernobrovkin. Candidates of Technical
Sciences. Ed. of Publishing House: I. M. Denis; Tech. Eds.: L. A. Imshenova,
and N. P. Shvedkina.

PURPOSE: This collection of articles is intended for technical personnel of
metallurgical plants and for members of scientific research institutions.

CONTENTS: The collection contains articles discussing a variety of problems
pertaining to ferrous and nonferrous metallurgy. A number of articles
describe new methods for investigating the properties of alloys and oxides
and review changes with time. Properties underpin as a result of the effect
of temperature and other factors. Findings of studies are summarized
in numerous articles and processes to be used for manufacturing ferroalloys
and naturally-alloyed steels are suggested. On the basis of the various
metal compounds, the authors of the articles are devoted to the study of problems
of manufacturing ferrous, nonferrous, and rare metals. The selection of
topics was made on the basis of the need for material relating to the improve-
ment of the quality control of alloys and the manufacturing processes employed
to produce them. No personalities are mentioned. Each article is accompanied
by references, most of which are Soviet.

АВТОРЫ: А.В. Серебрякова. О проблеме производства естественно-алюированной стали
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KRICHEVSKIY, I.R.; YEFREMOVA, G.D.; PRYANIKOVA, R.O.; SEREBRYAKOVA, A.V.

On a possible case of critical phenomena. Zhur.fiz.khim. 37
no.8:1924-1925 Ag '63. (MIRA 16:9)

1. Gosudarstvennyy institut azotnoy promyshlennosti i produktov
organicheskogo sinteza.
(Critical point) (Phase rule and equilibrium)

YEFREMOVA, G.D.; SEREBRYAKOVA, A.V.

Determination of the heat of melting of hexamethylenediamine.
Zhur. ob. khim. 34 no. 3:1028-1029 Mr '64. (MIRA 17:6)